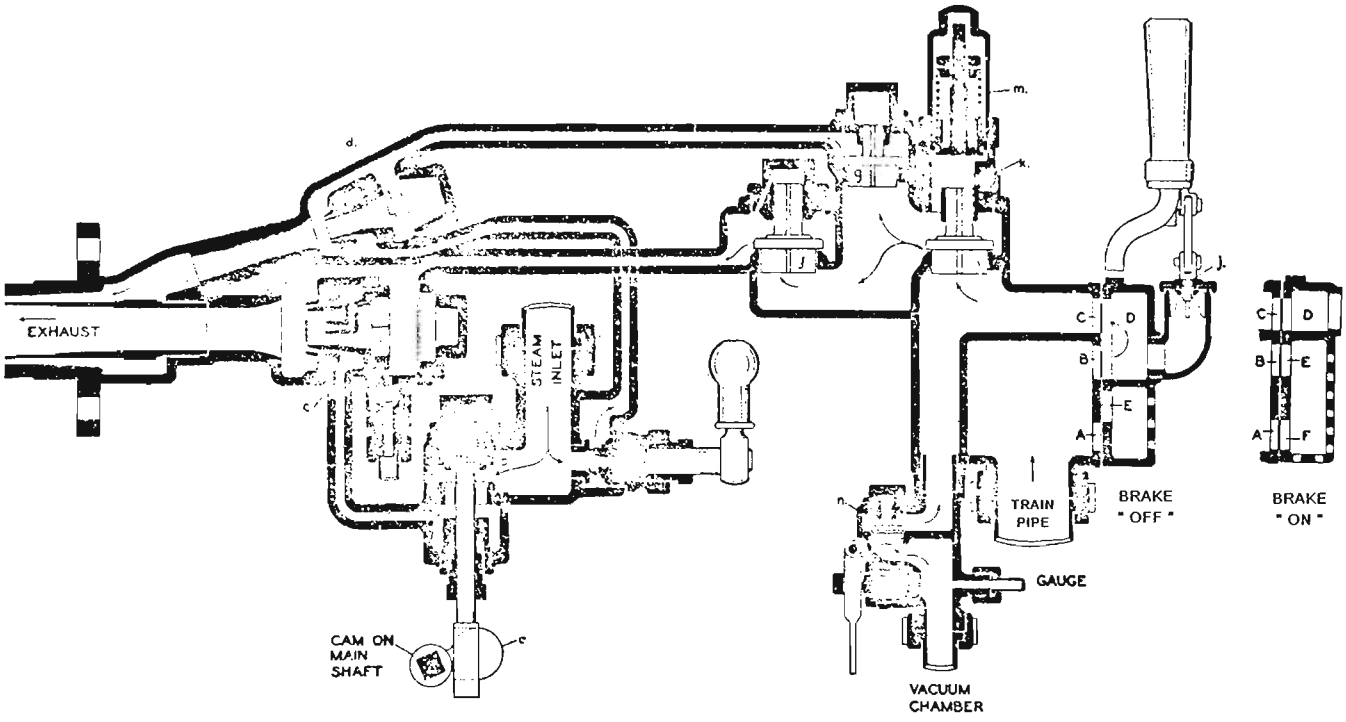


DREADNOUGHT EJECTOR

OPERATION

The diagram above illustrates the ejector in the "Brake Off" position, the cam (a) on the main shaft being raised to open the large ejector steam valve (b) and admit steam to the large cone (c) At the same time steam passes to the small cone (d) through the small ejector steam valve (e) This valve is set by hand so as to wire draw and reduce the steam pressure to about 120 lbs , which is the pressure at which this cone is designed to give its greatest efficiency.

Under the influence of both cones air is drawn rapidly from the train pipe past the large ejector air clack (f), the small ejector air clack (g) main air clack (h), and through cavity "D" in the air disc by way of ports "C" and "B," these ports being in full register in this position of the handle. At the same time air is drawn from the vacuum chambers on the engine and tender past release valve (n).

In the "Running Position" of the handle cam (a) lowers the large ejector steam valve (b), on to its seat, thus cutting off the supply of steam to the large ejector. The connection between the small cone and the train pipe through cavity "D" in the air disc remains open

GRESHAM & CRAVEN LTD.
ENGINEERS. MANCHESTER

and the small ejector maintains the working vacuum while the train is running. Operation of the auxiliary application valve (j) in this position admits air to the train pipe and enables light brake applications to be made for controlling the train speed.

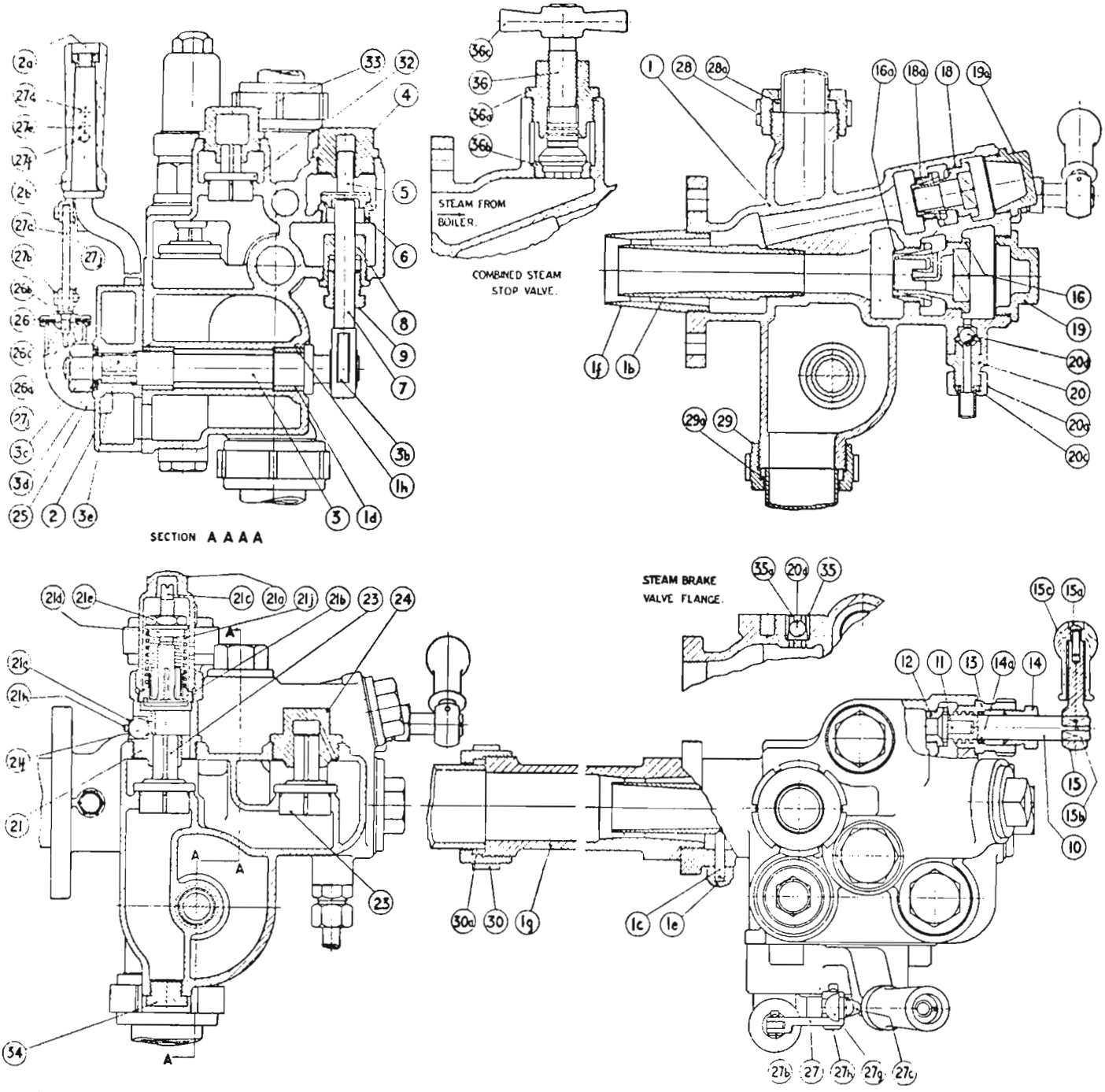
As the handle is moved towards the "Brake On" position the connection through cavity "D" is progressively closed. At the same time ports "E" and "F" in the air disc gradually uncover ports "B" and "A" in the ejector face and air is admitted to the train pipe to apply the brake. This air is prevented from passing to the engine and tender vacuum chambers by the non-return valve in release valve (n).

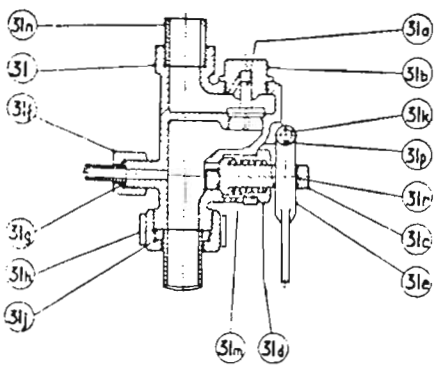
In the full "Brake On" position, ports "A" and "B" in the ejector face are completely open to atmosphere through ports "F" and "E" in the disc and the brake is rapidly applied. At the same time the wall of cavity (D) cuts off the connection between ports "B" and "C" so that the small ejector is isolated from the train pipe and draws only on the engine and tender vacuum chambers past release valve (n). In this way the maximum possible locomotive brake power is assured in emergency applications. The air passages in the ejector are so arranged that, in all cases, air from the train pipe is drawn past two gunmetal clacks before coming in contact with the steam. When steam is cut off from the cones and a vacuum is left in the train pipe, these clacks prevent moisture, and more especially smokebox gases, being drawn into the train pipe.

The ball valve (k), located below the relief valve (m) communicates with the chamber between the two ejector clacks and the main clack. When a vacuum is created in the instrument the ball is drawn to its seat, but falls off as soon as steam is shut off and the vacuum drops. Should clacks (f) and (g) be leaking, it provides an outlet for any vapour or steam. Should the main clack (h) leak it admits of air from the atmosphere being drawn into the train pipe, and so prevents any tendency to draw vapour and smokebox gases through clacks (f) and (g).

The vacuum relief valve (m) is a spring loaded valve which limits the degree of vacuum carried in the train pipe. When the point is reached at which it is set, atmospheric pressure above the valve overcomes the tension in the spring and the valve opens to admit air to the space above the main clack (h) thus preventing the creation of a higher vacuum in the train pipe.

The release valve (n) enables atmosphere to be admitted direct to the vacuum chambers so that the locomotive brake can be released by hand when the locomotive is uncoupled and when steam is not available.





EJECTOR RELEASE VALVE.

No. 30/20 IMPROVED DREADNOUGHT COMBINATION EJECTOR

GRESHAM & CRAVEN LTD.
ENGINEERS.

30/20 mm. DREADNOUGHT EJECTOR

LIST OF PARTS

Part No.	Description.
1*	Body, Left hand.
1x*	„ Right hand.
1b	Inner Exhaust barrel.
1c	Grub screw for Inner Exhaust barrel.
1d	Shaft bushes (2 per ejector).
1e	Cap nut for Inner Exhaust barrel.
1f	Inside fixing Exhaust barrel.
1g†	Outside „ „ „ (alternative to 1f).
1h	Pins for shaft bushes (2 per ejector).
2S	AIR DISC AND HANDLE COMPLETE WITH AUXILIARY APPLICATION VALVE, LEFT HAND EJECTOR. (Items 2, 2a, 2b, 25, 26, 26a, 26b, 26c, 27, 27a, to 27j).
2XS	AIR DISC AND HANDLE COMPLETE WITH AUXILIARY APPLICATION VALVE, RIGHT HAND EJECTOR. (Items 2, 2a, 2b, 25, 26, 26a, 26b, 26c, 27, 27a, to 27j).
2T	AIR DISC AND HANDLE, LEFT HAND EJECTOR (Items 2, 2a, 2b).
2XT	AIR DISC AND HANDLE, RIGHT HAND EJECTOR (Items 2, 2a, 2b).
2	Air Disc and handle only, Left hand Ejector.
2X	„ „ „ Right hand Ejector.
2a	„ handle washer.
2b	„ wood handle.
3S	MAIN SHAFT COMPLETE WITH CAM, NUT AND WASHER. (Items 3, 3b, 3c, 3d, and 3e).
3	Main Shaft only.
3b	„ „ Cam.
3c	„ „ Nut.
3d	„ „ Spring washer.
3e	„ „ Locating pin.
4	Large Ejector steam valve guide nut.
5	„ „ steam valve
6	„ „ „ „ Seating.
7	„ „ „ „ Spindle.
8	„ „ „ „ Packing Box.
9	„ „ „ „ Gland.
10S	SMALL EJECTOR STEAM VALVE COMPLETE WITH HANDLE, SEATING, PACKING BOX AND GLAND. (Items 10, 11, 12, 13, 14, 14a, 15, 15a, 15b, and 15c).

Part No.	Description.
10	Small Ejector Steam Valve Spindle.
11	„ „ „ „ Spindle end.
12	„ „ „ „ Seating.
13	„ „ „ „ Packing Box.
14	„ „ „ „ Gland.
14a	„ „ „ „ Packing box ring.
15S	SMALL EJECTOR STEAM VALVE HANDLE COMPLETE. (Items 15, 15a, 15b, 15c).
15	Small Ejector Steam Valve handle only.
15a	„ „ „ „ „ screw.
15b	„ „ „ „ „ rivet pin.
15c	„ „ „ Wood Handle.
16S	LARGE EJECTOR COMPLETE. (Items 16 and 16a).
16	Large Cone, inner part.
16a	„ „ outer part.
18S	SMALL EJECTOR COMPLETE. (Items 18, 18a).
18	Small Cone, inner part.
18a	„ „ outer part.
19	Large Ejector cap.
19a	Small „ „
20S	DRIP CONNECTION COMPLETE WITH NUT AND BALL. (Items 20, 20a, 20c and 20d).
20	Drip connection only.
20T	DRIP CONNECTION UNION NUT AND RING. (Items 20a and 20c).
20a	Drip Connection Union Nut.
20c	„ „ Union Nut Brazing Ring.
20d	„ „ Ball, $\frac{1}{2}$″ dia.
21S	RELIEF VALVE COMPLETE. (Items 21 to 21j).
21	Relief Valve body.
21a	„ „ cap.
21b	„ „ seating.
21c	„ „ spindle.
21d	„ „ spring nut.
21e	„ „ nut.
21f	$\frac{5}{8}$″ Air lock ball valve.
21g	Cage for Air lock ball valve.
21h	Set Screw for Air lock ball valve.
21j	Relief Valve Spring.
23	Large Air Clacks. (2 per Ejector).

GRESHAM & CRAVEN LTD.
ENGINEERS.

Part No.	Description.
24	Large Ejector Air Clack Guide.
25	Auxiliary Application Valve Body.
26S	AUXILIARY APPLICATION VALVE, COMPLETE WITH EYE-BOLT, WASHER AND GUIDE. (Items 26 to 26c).
26	Auxiliary Application Valve only.
26a	„ „ „ guide.
26b	„ „ „ eye-bolt.
26c	„ „ „ washer.
27S	AUXILIARY APPLICATION VALVE LEVER, COMPLETE WITH LINK AND PINS, LEFT HAND EJECTOR. (Items 27 to 27j).
27XS	AUXILIARY APPLICATION VALVE LEVER, COMPLETE WITH LINK AND PINS, RIGHT HAND EJECTOR. (Items 27 to 27j).
27T	AUXILIARY APPLICATION VALVE LEVER, SPRING AND HANDLE. LEFT HAND EJECTOR. (Items 27, 27c, 27d, 27e, 27f, 27g).
27XT	AUXILIARY APPLICATION VALVE LEVER, SPRING AND HANDLE. RIGHT HAND EJECTOR. (Items 27, 27c, 27d, 27e, 27f, 27g).
27	Auxiliary Application Valve handle only, Left hand Ejector.
27X	„ „ „ Right hand Ejector.
27a	„ „ „ link.
27b	„ „ „ link pins (2 per ejector)
27c	„ „ „ flat spring.
27d	Screw for wood pad of Auxiliary Application Valve Lever.
27e	[illegible] for wood pad of Auxiliary Application [illegible]
27f	[illegible] for wood pad of Auxiliary Application Valve Lever.
27g	Wood pad for Auxiliary Application Valve Lever.
27h	Auxiliary Application Valve Lever Pin.
27j	Split Pins for Auxiliary Application Valve (4 per ejector).
28S	UNION NUT AND RING FOR STEAM INLET. (Items 28 and 28a).
28	[illegible] only for Steam Inlet.
28a	[illegible] Steam Inlet.
29S	UNION NUT AND RING FOR TRAIN PIPE. (Items 29 and 29a).
29	Union Nut only for Train Pipe.
29a	Brazing Ring for Train Pipe.
30S	UNION NUT AND RING FOR EXHAUST PIPE. (Items 30 and 30a).
30	Union Nut only for Exhaust Pipe.
30a	Brazing Ring for Exhaust Pipe.
32	Small Air Clack.

Part No.	Description.
33	Small Air Clack Guide.
34	Vacuum Chamber Pipe Plug. (When release valve is not used).
31S	RELEASE VALVE COMPLETE. (Items 31 to 31r).
31	Release Valve body.
31a	„ „ air clack.
31b	„ „ air clack guide.
31c	„ „ spindle.
31d	„ „ spindle guide nut.
31e	„ „ lever.
31fS	RELEASE VALVE GAUGE CONNECTION UNION NUT AND RING. (Items 31f and 31g)
31f	Release Valve Gauge Connection Union Nut.
31g	Brazing Ring for Release Valve Gauge Connection Union Nut.
31hS	RELEASE VALVE VACUUM CHAMBER PIPE UNION NUT AND RING. (Items 31h and 31j).
31h	Release Valve Vacuum Chamber Pipe Union Nut.
31j	Brazing Ring for Release Valve Vacuum Chamber Pipe Union Nut.
31k	Release Valve lever pin.
31m	„ „ spring.
31n	„ „ connecting nipple.
31p	„ „ lever split pin.
31r	„ „ spindle bearing pin.
35	Ball cage for Ejector Steam Brake Valve Flange.
35a	Ball seating for Ejector Steam Brake Valve Flange.
20d	½" Brass Ball for Ejector Steam Brake Valve Flange.
36S	COMBINED STOP VALVE SPINDLE COMPLETE WITH GUIDE, HANDLE AND SEATING. (Items 36 to 36c).
36	Combined Stop Valve Spindle.
36a	„ „ „ „ guide.
36b	„ „ „ „ seating.
36c	„ „ „ „ handle.

*Type of Body must be specified, see page 9.

†Outside diameter of exhaust pipe should be given, see page 9.

Spares for the 20/13 mm. Ejector are equivalent to the 30/20 mm., and should be specified to the same item numbers, increased by 100.

EXAMPLES :—102XT = Air disc and handle for 20/13 mm. Ejector, right hand.

118 = Small cone, inner part, for 20/13 mm. Ejector.

GRESHAM & CRAVEN LTD.
ENGINEERS.

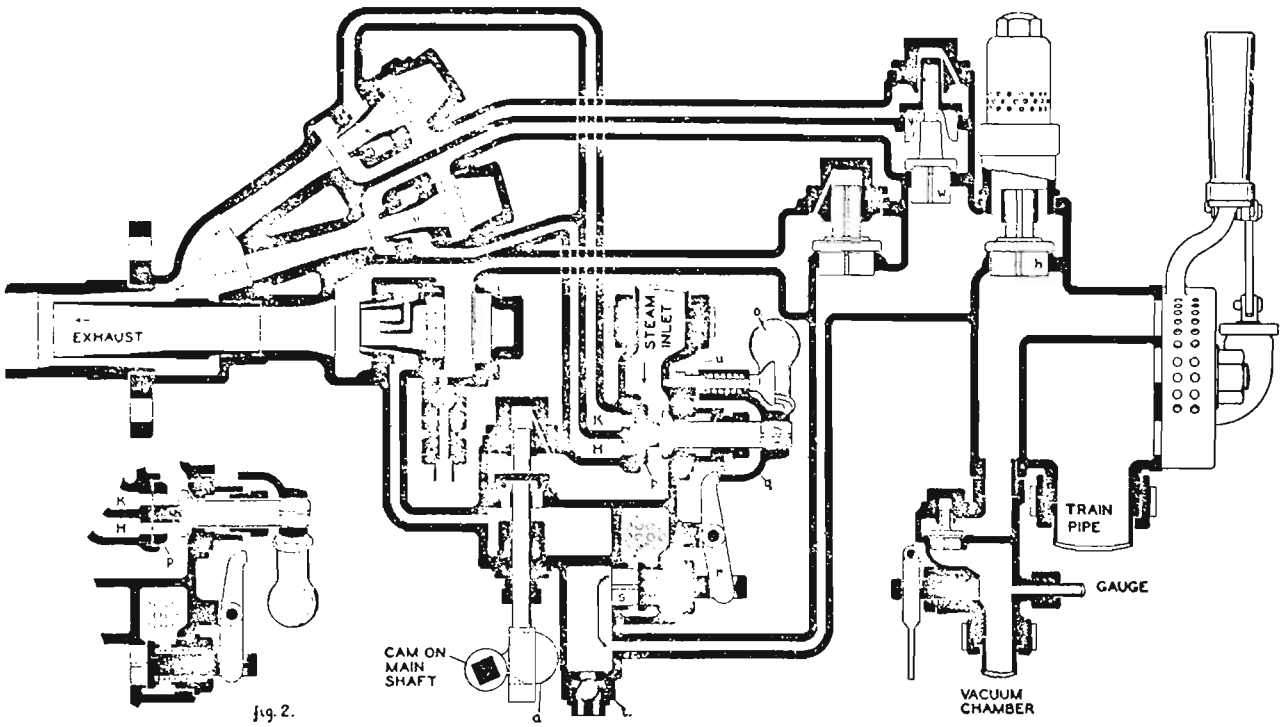


fig. 2.

SUPER-DREADNOUGHT EJECTOR

OPERATION

The above diagram of the "Super-Dreadnought" Ejector shows both the large and small steam valves closed, the former being opened to supply steam to the large cone in the "Release" position of the handle through cam (a) on the main shaft in exactly the same way as the Dreadnought type.

In the closed position of the small ejector steam valve handle (o) steam disc (p) shuts off the steam supply from both the small cones and at the same time the cam (q) on the handle operating through lever (r) opens the air valve (s). In this way any vacuum in the ejector is positively destroyed immediately the steam supply is cut off and any danger of injurious gases or moisture being drawn back into the train pipe effectively avoided. The drain valve (t) provides an outlet for any condensation and takes the place of the valve (k) on the Dreadnought Ejector.

When the small ejector steam valve is opened the plunger (u) prevents movement beyond the position in which one of the ports in the steam disc (p) registers with the passage (H). Steam is thus supplied to the lower small cone (v) only which then draws air from the

GRESHAM & CRAVEN LTD.
ENGINEERS,

train pipe past lower air clack (w), main air clack (h) and through the air disc cavity as described for the Dreadnought ejector. At the same time the movement of the handle carries the cam (q) clear of lever (r) and allows air valve (s) to close.

If it is found that the one small cone is incapable of maintaining the full working vacuum under conditions of excessive leakage or on a very long train the plunger (u) can be pulled back so as to allow further handle movement which will bring the two ports in the steam disc (p) into register with passages (H) and (K) as shown by figure 2. Additional steam is now supplied to the upper small cone (x) which in turn draws air from the train pipe past the upper air clack (y) and clacks (w) and (h).

With either one or both cones in operation the steam disc ports are arranged to give a graduated opening so that the steam supplied can be regulated to its most efficient pressure.

MAINTENANCE AND TESTING

Both the "DREADNOUGHT" and "SUPER-DREADNOUGHT" Ejectors are of simple design with all the parts readily accessible so that no special instructions for dismantling and re-assembly are necessary.

The ejectors contain no working parts which require lubrication, and provided they are kept reasonably clean, running repairs will be found to be practically negligible. The following, however, are points which should receive periodic attention.

Cones.—In no circumstances must cones be cleaned by filing or scraping. Soaking in a 10% solution of muriatic acid will soften any scale which may be deposited on them and this can then be wiped off with a cloth.

Air Disc.—The air disc is faced up with the ejector and it is most important to keep the securing nut only hand tight. If the ejector and disc faces are kept clean with a mere trace of vaseline between them, an air tight joint and easy operation will be assured without any risk of scoring the faces.

Steam Valves and Seatings.—Leaking steam valves should be lightly ground in as soon as leakage is observed so as to avoid the possibility of moisture being deposited in the ejector.

Air Clacks, Air Lock Valve and Drain Valves.—Apart from occasional cleaning, these will require little attention. The air clacks should be ground in lightly if required and care should be taken to see that the air lock ball valve of the Dreadnought ejector is free in its housing.

GRESHAM & CRAVEN LTD.
ENGINEERS,

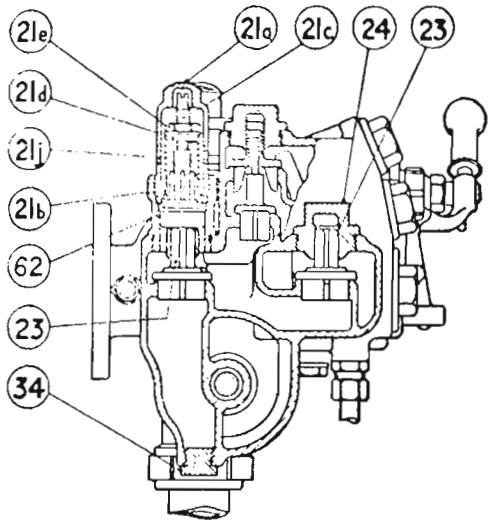
30/15-15 mm SUPER-DREADNOUGHT EJECTOR

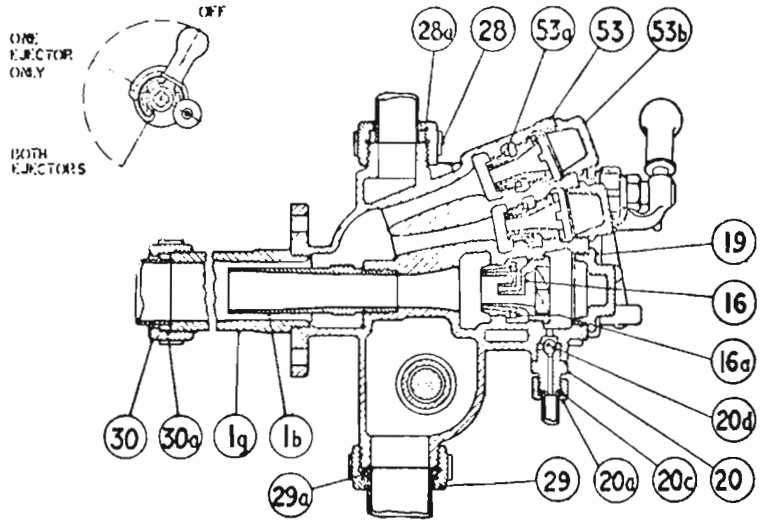
LIST OF PARTS

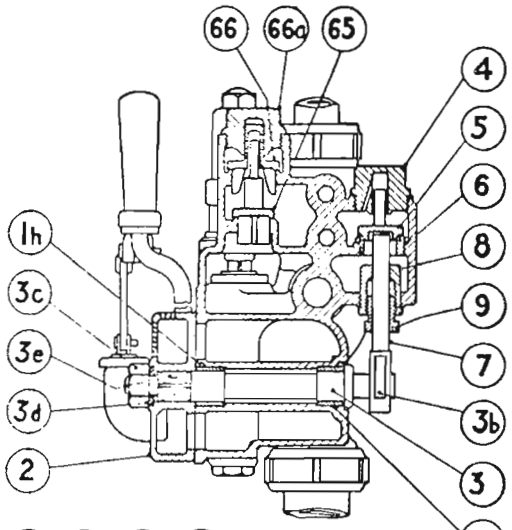
Part No.	Description.
50*	Body, Left Hand.
50x*	„ Right Hand.
1b	Inner Exhaust Barrel.
1c	Grub Screw for Inner Exhaust Barrel.
1d	Shaft Bushes (2 per Ejector).
1e	Cap Nut for Inner Exhaust Barrel.
1f	Inside fixing Exhaust Barrel.
1g†	Outside fixing Exhaust Barrel. (Alternative to 1f).
1h	Pins for Shaft Bushes (2 per Ejector).
2S	AIR DISC AND HANDLE COMPLETE WITH AUXILIARY APPLICATION VALVE, LEFT HAND EJECTOR. (Items 2, 2a, 2b, 25, 26, 26a, 26b, 26c, 27, 27a, to 27j).
2XS	AIR DISC AND HANDLE COMPLETE WITH AUXILIARY APPLICATION VALVE, RIGHT HAND EJECTOR. (Items 2, 2a, 2b, 25, 26, 26a, 26b, 26c, 27, 27a, to 27j.).
2T	AIR DISC AND HANDLE, LEFT HAND EJECTOR. (Items 2, 2a, 2b).
2XT	AIR DISC AND HANDLE, RIGHT HAND EJECTOR. (Items 2, 2a, 2)b.
2	Air Disc and Handle only, Left Hand Ejector.
2X	„ „ „ „ Right hand Ejector.
2a	„ „ handle washer.
2b	„ „ wood handle.
3S	MAIN SHAFT, COMPLETE WITH CAM, NUT AND WASHER. (Items 3, 3b, 3c, 3d, and 3e).
3	Main Shaft only.
3b	„ „ cam.
3c	„ „ nut.
3d	„ „ spring washer.
3e	„ „ locating pin.
4	Large Ejector Steam Valve guide nut.
5	„ „ „ „
6	„ „ „ „ seating.
7	„ „ „ „ spindle.
8	„ „ „ „ packing box.
9	„ „ „ „ gland.
58S	SMALL EJECTOR STEAM VALVE SPINDLE, COMPLETE WITH HANDLE, PACKING BOX, GLAND AND PLUNGER FOR LEFT HAND EJECTOR. (Items 58, 58bS, 58g, 58h, and 58kS).
58XS	SMALL EJECTOR STEAM VALVE SPINDLE, COMPLETE WITH HANDLE, PACKING BOX, GLAND AND PLUNGER FOR RIGHT HAND EJECTOR. (Items 58, 58bS, 58g, 58h, and 58kS).
58	Small Ejector Steam Valve Spindle
58a	„ „ „ Disc Valve.

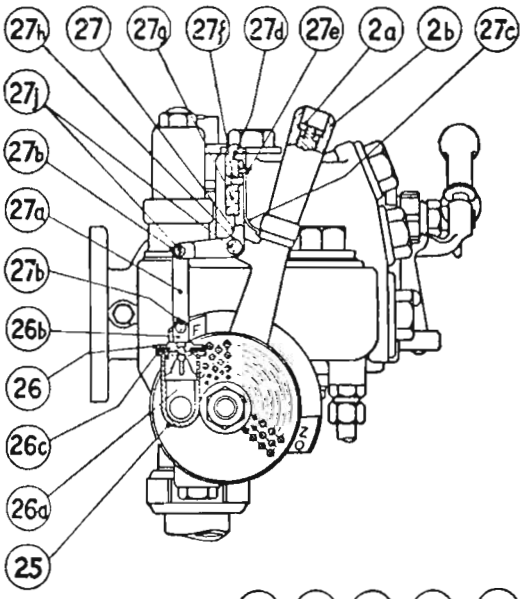
Part No.	Description.
58bS	SMALL EJECTOR STEAM VALVE PLUNGER, COMPLETE WITH SPRING. (Items 58b to 58f).
58b	Small Ejector Steam Valve Plunger only
58c	„ „ „ „ „ Spring.
58d	„ „ „ „ „ Wood handle.
58e	„ „ „ „ „ Nut.
58f	„ „ „ „ „ Washer.
58g	„ „ „ „ „ Packing box.
58h	„ „ „ „ „ Gland.
58kS	SMALL EJECTOR STEAM VALVE CAM HANDLE, COMPLETE WITH PLUNGER, FOR LEFT HAND EJECTOR. (Items 58bS and 58k to 58p).
58kS	SMALL EJECTOR STEAM VALVE CAM HANDLE, COMPLETE WITH PLUNGER, FOR RIGHT HAND EJECTOR. (Items 58bS and 58k to 58p).
58k	Small Ejector Steam Valve Cam handle only, Left Hand Ejector.
58kS	Small Ejector Steam Valve Cam handle only, Right Hand Ejector.
58m	Small Ejector Steam Valve wood handle Setscrew.
58n	Small Ejector Steam Valve Handle Taper Pin.
58p	Small Ejector Steam Valve wood handle.
16S	LARGE EJECTOR COMPLETE. (Items 16 and 16a).
16	Large Cone, inner part.
16a	„ „ outer part.
53S	SMALL EJECTOR COMPLETE. (Items 53 and 53a).
53	Small Cone, inner part (2 per Ejector).
53a	„ „ outer part, (2 per Ejector).
19	Large Ejector Cap.
53b	Small Ejector Cap. (2 per ejector).
20S	DRIP CONNECTION COMPLETE WITH NUT AND BALL. (Items 20, 20a, 20c, 20d).
20	Drip Connection only.
20T	DRIP CONNECTION UNION NUT AND RING. (Items 20a and 20c).
20a	Drip Connection Union Nut.
20c	Brazing Ring for Drip Connection Union Nut.
20d	Drip Connection Ball, ½ in. dia.
62S	RELIEF VALVE COMPLETE. (Items 62 and 21a to 21j).
62	Relief Valve body.
21a	„ „ cap.
21b	„ „ seating.
21c	„ „ spindle.
21d	„ „ spring nut.

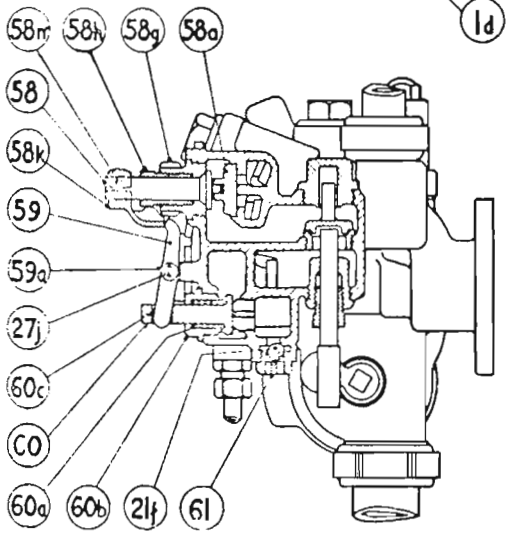
GRESHAM & CRAVEN LTD.
ENGINEERS.

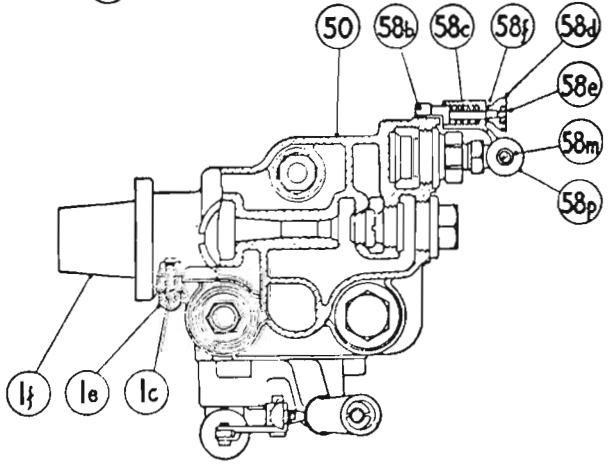












For items 31 to 31n, 35, 35a & 36 to 36c see "Dreadnought" Ejector

No. 30 15/15 SUPER DREADNOUGHT COMBINATION EJECTOR

GRESHAM & CRAVEN LTD.
ENGINEERS.

Part No.	Description.
21e	Relief Valve nut.
21j	„ „ spring.
23	Large Air Clacks (2 per Ejector).
24	Large Ejector Air Clack Guide.
25	Auxiliary Application Valve Body.
26S	AUXILIARY APPLICATION VALVE, COMPLETE WITH EYE-BOLT, WASHER AND GUIDE. (Items 26 to 26c).
26	Auxiliary Application Valve only.
26a	„ „ „ guide.
26b	„ „ „ eye-bolt.
26c	„ „ „ washer.
27S	AUXILIARY APPLICATION VALVE LEVER, COMPLETE WITH LINK AND PINS, LEFT HAND EJECTOR. (Items 27 to 27j).
27XS	AUXILIARY APPLICATION VALVE LEVER, COMPLETE WITH LINK AND PINS, RIGHT HAND EJECTOR. (Items 27 to 27j).
27T	AUXILIARY APPLICATION VALVE LEVER SPRING AND HANDLE, LEFT HAND EJECTOR. (Items 27, 27c, 27d, 27e, 27f, 27g).
27XT	AUXILIARY APPLICATION VALVE LEVER SPRING AND HANDLE, RIGHT HAND EJECTOR. (Items 27, 27c, 27d, 27e, 27f, 27g).
27	Auxiliary Application Valve Handle only, Left Hand Ejector.
27X	Auxiliary Application Valve Handle only, Right Hand Ejector.
27	Auxiliary Application Valve Link.
27b	Auxiliary Application Valve Link Pin. (2 per Ejector).
27c	Auxiliary Application Valve Flat Spring.
27d	Screw for wood pad of Auxiliary Application Valve Lever.
27e	Screw for wood pad of Auxiliary Application Valve Lever.
27f	Screw for wood pad of Auxiliary Application Valve Lever.
27g	Wood pad for Auxiliary Application Valve Lever.
27h	Auxiliary Application Valve Lever Pin.
27j	Split Pins for Auxiliary Application Valve, (4 per Ejector).
28S	UNION NUT AND RING FOR STEAM INLET. (Items 28 and 28a).
28	Union Nut only for Steam Inlet.
28a	Brazing Ring for Steam Inlet.
29S	UNION NUT AND RING FOR TRAIN PIPE (Items 29 and 29a).
29	Union Nut only for Train Pipe.
29a	Brazing Ring for Train Pipe.
30S	UNION NUT AND RING FOR EXHAUST PIPE. (Items 30 and 30a).
30	Union Nut only for Exhaust Pipe.
30a	Brazing Ring for Exhaust Pipe.
65	Lower Small Ejector Air Clack.
66	Upper Small Ejector Air Clack.
66a	Small Ejector Air Clack Guide.
60S	AIR LOCK VALVE COMPLETE WITH SPRING AND CAP. (Items 60 to 60c).

Part No.	Description.
60	Air Lock Valve.
60a	„ „ „ spring.
60b	„ „ „ cap.
60c	„ „ „ bearing pin.
59	„ „ Lever
59a	„ „ „ pin.
27j	Split pin for Air Lock Lever Pin.
61	Drip Plug.
21f	$\frac{5}{8}$" Brass Ball for Drip Plug.
34	Vacuum Chamber Plug (when release valve is not used).
31S	RELEASE VALVE COMPLETE. (Items 31 to 31n).
31	Release Valve Body.
31a	Release Valve Air Clack.
31b	„ „ Air Clack Guide.
31c	„ „ Spindle.
31d	„ „ Spindle Guide Nut.
31e	„ „ Lever.
31fS	RELEASE VALVE GAUGE CONNECTION UNION NUT AND RING. (Items 31f, 31g).
31f	Release Valve Gauge Connection Union Nut.
31g	Brazing Ring for Release Valve Gauge Connection Union Nut.
31hS	RELEASE VALVE VACUUM CHAMBERS PIPE UNION NUT AND RING. (Items 31h, 31j).
31h	Release Valve Vacuum Chamber Pipe Union Nut.
31j	Brazing Ring for Release Valve Vacuum Chamber Pipe Union Nut.
31k	Release Valve lever pin
31m	„ „ spring.
31n	„ „ connecting nipple.
31p	„ „ lever split pin.
31r	„ „ lever bearing pin.
35	Ball Cage for Ejector Steam Brake Valve Flange.
35a	Ball Seating for Ejector Steam Brake Valve Flange.
20d	$\frac{1}{2}$" Brass Ball for Ejector Steam Brake Valve Flange.
36S	COMBINED STOP VALVE SPINDLE COMPLETE WITH GUIDE, HANDLE AND SEATING. (Items 36 to 36c).
36	Combined Stop Valve Spindle.
36a	„ „ „ „ guide.
36b	„ „ „ „ seating.
36c	„ „ „ „ handle.

*Type of body must be specified, see page 9.

†Outside diameter of exhaust pipe should be given, see page 9.

NOTE.—Item numbers 1 to 36 are identical with "Dreadnought" spares.

Item numbers 50 and up are special to the "Super-Dreadnought."

GRESHAM & CRAVEN LTD.
ENGINEERS.

SPARE PARTS

Detailed lists of all spare parts for both "Dreadnought" and "Super-Dreadnought" Ejectors are given on pages 10 to 15, and clearly illustrated on the corresponding general drawings. The part numbers should always be specified when ordering replacements.

The following particulars should be given when complete ejectors are required :—

(1) TYPE OF BODY—Whether for use with an attached steam brake valve or without steam brake valve and if an incorporated stop valve is required.

(2) HANDING— Left or right, *i.e.*, is the driver's handle on the left or right viewed from the back of the ejector?

(3) FIXING— Whether for use with an exhaust pipe running inside or outside the boiler. With outside fixing ejectors the size of the exhaust pipe should be stated if this differs from the standard $2\frac{1}{4}$ in. bore x $2\frac{5}{8}$ in. outside diameter.

Code references, as under, can be used to identify all standard types :—

Left Hand, inside fixing Ejectors.

9446	...	30/15—15 mm. Super-Dreadnought, standard pattern.
9571	...	" " with Steam Brake Valve flange.
9572	...	" " with combined Stop Valve.
9573	...	" " " " " " and Steam Brake Valve flange.
9546	...	30/20 mm. Dreadnought, Standard pattern.
9612	...	" " with Steam Brake Valve flange.
9633	...	" " with combined Stop Valve.
7124	...	" " " " " " and Steam Brake Valve flange.
7359	...	20/13 mm. " Standard pattern.
7510	...	" " with Steam Brake Valve flange.
8247	...	" " with Combined Stop Valve.

For right hand Ejectors add letter "X" to code number.
For outside fixing Ejectors add letter "G" to code number.

EXAMPLES :—9546XG = Standard 30/20 mm. "Dreadnought" Ejector, right hand, outside fixing.
9571G = 30/15/15 mm. "Super-Dreadnought" Ejector, left hand, outside fixing, with Steam Brake Valve flange.

Particulars of the various types of Steam Brake Valves available for use with these Ejectors are given in a separate pamphlet.

GRESHAM & CRAVEN LTD.
ENGINEERS.